

Table 1

Surface F	Radius	Thickness	Index	Refl.
0	0	23,873	1	
1	-514,1255	15,011	1,55841	
2	874,9597	19,658	1	
3	-164,7782	17,592	1,55841	
4	591,5312	16,698	1	
5	-411,5495	39,945	1,55841	
6	-253,8743	0,805	1	
7	44050,2337	28,964	1,55841	
8	-488,2655	0,819	1	
9	6892,6647	30,767	1,55841	
10	-416,1366	1,7	1	
11	-2639,6629	36,25	1,55841	
12	-314	125,023	1	
13	0	-125,023	-1	REFL
14	656,3795	-20,364	-1,55841	
15	387,2599	-5,088	-1	
16	-221,0043	-38,961	-1,55841	
17	-594,7813	-104,385	-1	
18	2025,3852	-15,114	-1,55841	
19	-130,7295	-32,824	-1	
20	450,0559	-15,487	-1,55841	
21	-237,9966	-2,286	-1	
22	-233,843	-15,026	-1,55841	
23	-387,8199	-11,6	-1	
24	0	-260,009	-1,55841	
25	0	-21,118	-1	
26	465,2956	21,118	1	REFL
27	0	130	1,55841	
28	0	-130	-1,55841	REFL
29	0	-2,5	-1	
30	0	-2,955	-1	
31	-1477,4814	-20,003	-1,55841	
32	515,0828	-4,354	-1	
33	403,7271	-20	-1,55841	
34	863,568	-0,7	-1	
35	-115,1616	-26,976	-1,55841	
36	-99,4329	-20,828	-1	
37	-208,5305	-27,07	-1,55841	
38	288,8063	-0,7	-1	
39	-111,6732	-20	-1,55841	
40	-290,3444	-0,7	-1	
41	-115,7493	-42,235	-1,55841	
42	1800,1763	-0,7	-1	
43	-1543,2041	-20	-1,55841	
44	-1520,1184	-4,126	-1	
45	0	0	-1	

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Table 2

Surface	F	K	C1	C2	C3	C4	C5	C6	C7	C8
5		0	-1,91E-09	-1,44E-13	-2,00E-18	-1,60E-22				
16		0	3,41E-09	-4,59E-14	-1,75E-18	-2,93E-23				
19		0	7,84E-08	-6,81E-14	-5,41E-17	-5,23E-21	1,14E-25			
22		0	2,18E-08	-6,21E-13	-3,93E-17	-5,46E-21	3,07E-25			
26		0	-2,75E-10	-7,95E-15	-1,39E-19	-3,14E-24	-7,02E-29			
31		0	4,74E-08	1,46E-12	7,89E-19	2,73E-20	-7,42E-24	1,41E-27	-1,40E-31	6,38E-36
40		0	8,08E-08	-1,64E-12	2,18E-16	-3,23E-21	9,02E-24			
44		0	-1,84E-07	2,16E-10	-2,04E-13	8,20E-17	1,26E-23	-1,07E-34		

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Table 3

Embodi- ment	Tables	Figure	TT [mm]	f _M [mm]	f _M /TT	β _M	u1 [% NA]	u2 [% NA]	NA	λ [nm]
1	1, 2	1	1519	232,65	0,153	-1,533	-0,35	0,23	0,85	157
2	4, 5		1544	232	0,150	-1,476	-0,36	0,24	0,85	193
3	6, 7	2	1493	225,53	0,151	-1,662	-0,37	0,23	0,85	157
4	8, 9		1502	226,89	0,151	-1,633	-0,37	0,23	0,85	157
5	10, 11	3	1399	218,22	0,156	-1,683	-0,38	0,23	0,8	157
6	12, 13	4	1280	191,46	0,150	-1,892	-0,41	0,22	0,85	157

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Table 4

Surface F	Radius	Thickness	Index	Refl.
0	0	23,447	1	
1	-576,9069	8,474	1,5603	
2	638,6311	18,73	1	
3	-170,9523	19,632	1,5603	
4	521,3895	16,932	1	
5	-443,5956	41,675	1,5603	
6	-251,4028	0,994	1	
7	3243,2688	31,68	1,5603	
8	-569,5097	0,903	1	
9	2219,3899	35,048	1,5603	
10	-520,3404	0,96	1	
11	12078,1166	44,949	1,5603	
12	-331,0159	122,402	1	
13	0	-122,402	-1	REFL
14	793,0349	-28,276	-1,5603	
15	642,0364	-22,727	-1	
16	-185,9374	-35,834	-1,5603	
17	-417,8538	-101,974	-1	
18	-1912,6548	-7,473	-1,5603	
19	-136,8289	-37,657	-1	
20	255,9776	-15,458	-1,5603	
21	-202,357	-4,312	-1	
22	-223,8885	-17,089	-1,5603	
23	-978,2462	-5,741	-1	
24	0	-260	-1,5603	
25	0	-21,803	-1	
26	463,9965	21,803	1	REFL
27	0	130	1,5603	
28	0	-130	-1,5603	REFL
29	0	-4,302	-1	
30	0	-0,878	-1	
31	-4338,7149	-22,61	-1,5603	
32	2656,0923	-4,077	-1	
33	1449,3709	-23,548	-1,5603	
34	1224,1815	-0,7	-1	
35	-105,5392	-26,164	-1,5603	
36	-91,7838	-20,544	-1	
37	-167,6512	-25,83	-1,5603	
38	628,2533	-0,7	-1	
39	-95,9777	-21,796	-1,5603	
40	-360,1319	-0,7	-1	
41	-121,3189	-39,046	-1,50144	
42	-162,6721	-0,7	-1	
43	-144,838	-19,722	-1,50144	
44	-6676,3755	-4,034	-1	
45	0	0	-1	

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Table 5

Surface F	K	C1	C2	C3	C4	C5	C6	C7	C8
5	0	-1,09E-09	-1,13E-13	-3,70E-18	-1,87E-22	1,76E-26	-2,95E-30		
16	0	1,43E-09	-1,02E-13	-3,78E-18	-4,26E-23	-4,09E-27			
19	0	6,14E-08	-7,16E-13	-8,98E-17	-7,17E-21	-4,17E-25			
22	0	2,49E-08	-9,38E-13	-1,56E-17	-4,46E-21	2,39E-25			
26	0	-1,20E-09	-3,09E-14	-6,56E-19	-6,03E-24	-4,20E-28			
31	0	1,36E-08	4,96E-13	8,40E-17	-1,98E-20	4,11E-24	-4,08E-28	1,90E-32	
40	0	8,37E-09	-3,01E-14	1,94E-17	4,31E-20	-7,77E-24	7,02E-28		
44	0	-1,57E-07	3,14E-10	-4,05E-13	7,62E-16	-7,28E-19			

Table 6

Surface F	Radius	Thickness	Index	Refl.
0	0	34,921	1	
1	-144,147	20	1,55841	
2	-143,5689	24,849	1	
3	-158,057	15	1,55841	
4	445,5917	26,465	1	
5	-362291,091	41,157	1,55841	
6	-167,7266	0,731	1	
7	-204,1721	23,093	1,55841	
8	-521,4298	4,512	1	
9	1233,1796	38,161	1,55841	
10	-355,3331	0,7	1	
11	-785,3737	30	1,55841	
12	-367,3718	107,715	1	
13	0	-107,715	-1	REFL
14	-285,7912	-35,606	-1,55841	
15	-1724,253	-15,9	-1	
16	-236,6968	-39,993	-1,55841	
17	-9508,9014	-20,148	-1	
18	-644,5295	-15,053	-1,55841	
19	-178,8829	-32,313	-1	
20	1546,3666	-14,968	-1,55841	
21	-127,6893	-32,237	-1	
22	495,5614	-14,016	-1,55841	
23	-320,2759	-11,993	-1	
24	0	-259,835	-1,55841	
25	0	-21,856	-1	
26	451,0521	21,856	1	REFL
27	0	129,918	1,55841	
28	0	-129,918	-1,55841	REFL
29	0	-2,5	-1	
30	0	-7,158	-1	
31	960,72	-18,405	-1,55841	
32	-655,2188	-1,009	-1	
33	-146,1225	-33,261	-1,55841	
34	-1131,294	-13,637	-1	
35	434,9503	-24,693	-1,55841	
36	593,2116	-0,7	-1	
37	-167,6296	-18	-1,55841	
38	-132,7409	-0,7	-1	
39	-84,2028	-26,09	-1,55841	
40	-474,4717	-0,7	-1	
41	-131,1971	-18,013	-1,55841	
42	-190,6516	-0,701	-1	
43	-98,2752	-52,926	-1,55841	
44	-28685,5352	-4,061	-1	
45	0	0	-1	

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Table 7

Surface F	K	C1	C2	C3	C4	C5	C6	C7	C8	C9
6	0	8,43E-09	1,79E-13	4,97E-18	-3,05E-22	5,83E-26	-2,28E-30	-6,73E-34	8,91E-38	-3,43E-42
20	0	-5,28E-08	5,01E-12	-3,19E-16	3,55E-20	-3,52E-24	-1,17E-29	7,01E-32	-8,69E-36	3,43E-40
22	0	1,96E-08	-1,76E-12	-3,33E-17	2,21E-20	-7,35E-24	5,06E-28	1,95E-31	-4,82E-35	3,11E-39
31	0	3,74E-08	-4,29E-12	5,69E-16	-5,41E-20	2,63E-24	1,41E-28	-4,22E-33	-2,53E-36	1,99E-40
33	0	-7,28E-08	2,53E-12	-5,66E-16	5,21E-20	-2,73E-24	-1,56E-28	4,86E-33	1,62E-36	-1,58E-40
36	0	-4,71E-08	4,18E-12	4,85E-16	-1,11E-19	9,25E-24	-5,40E-28	-1,21E-31	2,84E-35	-1,60E-39
40	0	-1,78E-07	-2,45E-11	2,53E-16	3,65E-19	-1,34E-22	-3,39E-27	8,65E-30	-2,02E-33	1,26E-37
44	0	-2,79E-07	2,75E-10	-9,23E-14	2,19E-16	2,15E-27	2,76E-31	2,74E-31	-7,16E-27	1,15E-29

Table 8

Surface F	Radius	Thickness	Index	Refl.
0	0	35,442	1	
1	-136,4043	15	1,55841	
2	-136,4127	30,561	1	
3	-148,1696	15,611	1,55841	
4	496,3223	27,462	1	
5	-6515,4006	40	1,55841	
6	-175,9965	0,7	1	
7	-217,2231	22,309	1,55841	
8	-402,0377	3,157	1	
9	1094,4566	39,559	1,55841	
10	-366,1274	0,7	1	
11	-606,9599	21,178	1,55841	
12	-344,2934	125	1	
13	0	-125	-1	REFL
14	-256,8607	-35,242	-1,55841	
15	-1073,3629	-0,7	-1	
16	-238,0238	-40	-1,55841	
17	-10795,1914	-18,391	-1	
18	-598,3939	-15,331	-1,55841	
19	-183,3664	-22,55	-1	
20	-3632,8802	-15	-1,55841	
21	-124,0037	-36,596	-1	
22	334,4845	-15	-1,55841	
23	-351,348	-11,495	-1	
24	0	-259,916	-1,55841	
25	0	-21,739	-1	
26	453,7818	21,739	1	REFL
27	0	129,958	1,55841	
28	0	-129,958	-1,55841	REFL
29	0	-2,5	-1	
30	0	-10,611	-1	
31	441,3057	-20	-1,55841	
32	-1362,4398	-0,7	-1	
33	-137,4273	-33,622	-1,55841	
34	-802,6309	-10,323	-1	
35	1035,8108	-24,037	-1,55841	
36	3460,0271	-0,7	-1	
37	-180,4152	-20	-1,55841	
38	-142,5835	-0,7	-1	
39	-85,8684	-24,909	-1,55841	
40	-420,7458	-0,7	-1	
41	-121,5434	-20	-1,55841	
42	-170,3607	-0,7	-1	
43	-88,9044	-52,562	-1,55841	
44	-1435,4203	-4,158	-1	
45	0	0	-1	

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Table 9

Surface F	K	C1	C2	C3	C4	C5	C6
6	0	6,79E-09	1,43E-13	3,37E-18	3,89E-23		
20	0	-1,98E-08	2,45E-12	-7,82E-17	5,18E-21	-1,63E-26	-1,04E-29
22	0	-5,02E-10	-1,02E-12	-4,11E-17	5,56E-21	-1,58E-24	
31	0	2,13E-08	-4,19E-12	6,56E-16	-5,80E-20	2,93E-24	
33	0	-5,77E-08	3,12E-12	-6,22E-16	5,56E-20	-3,26E-24	-3,99E-29
36	0	-4,68E-08	3,75E-12	6,37E-16	-1,42E-19	6,45E-24	
40	0	-1,84E-07	-1,96E-11	-5,18E-16	4,29E-19	-8,45E-23	

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 Q68039
 CATADICTRIC REDUCTION LENS
 FILED: January 23, 2002
 George F. Lehnigk (202) 293-7060
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Table 10

Surface F	Radius	Thickness	Index	Refl.
0	0	75,023	1	
1	-147,1623	15,984	1,55841	
2	-180,9092	0,7	1	
3	-195,2149	16,044	1,55841	
4	429,6174	25,915	1	
5	1041,8189	32,79	1,55841	
6	-323,4463	1,842	1	
7	1391,461	40	1,55841	
8	-434,9808	0,7	1	
9	-867,3896	23,643	1,55841	
10	-340,2224	96,83	1	
11	0	-96,83	-1	REFL
12	-284,7532	-39,085	-1,55841	
13	2733,3227	-0,7	-1	
14	-251,834	-37,88	-1,55841	
15	-1890,6267	-37,107	-1	
16	1652,3835	-15	-1,55841	
17	-123,2342	-34,072	-1	
18	7167,3148	-26,162	-1,55841	
19	-161,5294	-16,98	-1	
20	-7689,1844	-15	-1,55841	
21	-364,447	-10,232	-1	
22	0	-239,911	-1,55841	
23	0	-19,521	-1	
24	436,4421	19,521	1	REFL
25	0	119,955	1,55841	
26	0	-119,955	-1,55841	REFL
27	0	-2,5	-1	
28	0	-7,32	-1	
29	-11835,2915	-21,153	-1,55841	
30	-22182,225	-0,7	-1	
31	-395,2489	-20	-1,55841	
32	-1962,5819	-10,468	-1	
33	-299,9226	-27,263	-1,55841	
34	-25197,9401	-0,752	-1	
35	-321,0548	-22,837	-1,55841	
36	-144,5063	-5,603	-1	
37	-178,0837	-22,597	-1,55841	
38	338,4456	-0,7	-1	
39	-96,0589	-23,237	-1,55841	
40	-141,1939	-0,871	-1	
41	-94,5774	-51,253	-1,55841	
42	-970,0583	-4,18	-1	
43	0	0	-1	

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Table 11

Surface F	K	C1	C2	C3	C4	C5	C6	C7	C8
2	0	1,58E-08	6,70E-13	2,30E-17	1,07E-22	-7,06E-27			
17	0	-2,95E-08	-1,03E-12	3,89E-17	-1,19E-21	2,40E-24	-7,20E-29		
19	0	1,39E-07	4,23E-12	1,09E-16	-1,59E-20				
20	0	4,78E-08	4,96E-12	3,33E-16					
29	0	4,62E-08	5,21E-13	2,76E-16	-1,12E-19	3,26E-23	-5,38E-27	4,85E-31	-1,79E-35
40	0	2,00E-07	7,54E-12	-1,60E-15	6,10E-20	1,08E-23			
42	0	-3,82E-07	3,51E-10	-9,86E-14	-9,85E-16	1,57E-18			

Table 12

Surface F	Radius	Thickness	Indes	Refl.
0	0	26,737	1	
1	-366,9645	15	1,55841	
2	415,6221	0,708	1	
3	256,8403	15	1,55841	
4	600,266	22,819	1	
5	-168,4344	15	1,55841	
6	1523,0512	16,298	1	
7	-320,6541	23,151	1,55841	
8	-177,2161	0,7	1	
9	696,7469	28,536	1,55841	
10	-556,3056	0,7	1	
11	305,0769	48,354	1,55841	
12	2871,7213	109,377	1	
13	0	-109,377	-1	REFL
14	-199,288	-27,759	-1,55841	
15	-448,2896	-0,789	-1	
16	-144,8182	-51,573	-1,55841	
17	-814,4178	-5,106	-1	
18	-336,8842	-16,074	-1,55841	
19	-118,996	-23,692	-1	
20	-356,8073	-15	-1,55841	
21	-114,0033	-43,916	-1	
22	139,4303	-15	-1,55841	
23	-603,1581	-7,132	-1	
24	0	-194,813	-1,55841	
25	0	-20,251	-1	
26	382,9129	20,251	1	REFL
27	0	109,907	1,55841	
28	0	-109,907	-1,55841	REFL
29	0	-2,5	-1	
30	0	-2,5	-1	
31	-243,6014	-15	-1,55841	
32	-167,8596	-0,7	-1	
33	-100,3661	-31,95	-1,55841	
34	-593,7295	-13,613	-1	
35	366,2235	-31,682	-1,55841	
36	-1205,5606	-0,7	-1	
37	-474,0574	-15	-1,55841	
38	287,5815	-0,7	-1	
39	-96,5382	-15	-1,55841	
40	-218,7472	-0,7	-1	
41	-77,7014	-30,491	-1,55841	
42	-204,5141	-0,7	-1	
43	-202,1856	-21,49	-1,55841	
44	-39102,8993	-4,022	-1	
45	0	0	-1	

Table 13

Surface	F	K	C1	C2	C3	C4	C5	C6	C7	C8
2		0	-6,26E-09	2,06E-12	-6,06E-17	9,79E-21	-1,35E-24	9,00E-29		
14		0	1,72E-08	3,66E-13	8,90E-18	1,17E-22	7,83E-27			
26		0	-5,67E-11	-3,02E-14	-6,77E-19	-1,74E-22	1,78E-26	-1,75E-30	8,35E-35	-2,03E-39
31		0	1,96E-08	1,34E-12	-1,76E-16	1,43E-19	-5,09E-23	1,14E-26	-1,39E-30	7,66E-35
38		0	-5,60E-08	-6,60E-12	1,87E-15	-5,30E-19	1,03E-22	-7,02E-27		
41		0	-5,82E-09	1,33E-11	4,77E-15	9,39E-18	-3,77E-21	1,63E-24		
44		0	-3,20E-07	3,78E-10	6,07E-13	-1,98E-15	6,11E-18	-7,14E-21		